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THE PLANT DISEASE REPORTER

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Division of Mycology and Disease Survey

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BELTSVILLE BRANCH

The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

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THE PLANT DISEASE SURVEY

DIVISION OF MYCOLOGY AND DISEASE SURVEY

Volume XXVI February 1, 1942 Number 2

IN THIS ISSUE

Check list revision, by Freeman Weiss, page 32.

O. H. Elmer reports, page 44, that in preliminary experiments in Kansas the compound Spergon has proved very effective as a fungicidal treatment for sweetpotato seed and sprouts, and urges a more widespread investigation of its usefulness.

A disease of unknown origin, tentatively called "rosette", caused most concern to tomato growers in southern Texas, according to A. L. Harrison and S. S. Ivanoff, who report the results of a plant disease survey primarily of tomato fields but with some records of other vegetable crops in that region, page 46.

Occurrence of tomato leaf mold and of muskmelon powdery mildew in the field in New Hampshire is reported by R. W. Barratt, page 49.

H. W. Johnson and C. L. Lefebvre report the occurrence of downy mildew on soy bean seeds, page 49.

Charcoal rot is most prevalent in the eastern and central portions but occurs on grain sorghum and on corn in all sections of Nebraska, according to J.E. Livingston, page 50. The contrast in observed incidence between 1940 and 1941 was apparently due to the difference in weather.

S. B. Fenne reports some observations on tobacco diseases in Virginia in 1941, page 52.

Roy G. Pierce of the Bureau of Entomology and Plant Quarantine summarizes the spread of white pine blister rust in the southern Appalachians in 1941, page 54.

Annouucement of a preliminary check list of entomogenous fungi of North America, page 55.

Correspondence, page 56.

CHECK LIST REVISION

Freeman Weiss

PRUNUS -- continued.

P. ALLEGHENIENSIS, under P. MARITIMA

PRUNUS AMERICANA Marsh., AMERICAN PLUM. Small tree or shrub occurring throughout the U.S. except the Far West and Southwest, cult. for fruit and for ornament, Zone III; also P. NIGRA Ait., CANADA PLUM, in the Great Lakes and Northeastern States, cult. Zone II.

Cercospora circumscissa Sacc., leaf spot. Ill., Nebr., N.Dak.
C. prunicola Ell. & Ev., leaf spot. Ala., La.
Cladosporium carpophilum Thüm., scab. Widespread.
Coccomyces prunophorae Higgins, leaf spot. Ind.
Coryneum carpophilum (Lév.) Jauch, shoot blight. Oregon.
Diaporthe prunicola (Pk.) Weh., twig canker. Iowa, Nebr.
Dibotryon morbosum (Schw.) Theiss. & Syd., black knot. Widespread.
Erwinia amylovora (Burr.) Winslow et al., fire blight. Wis.
Fomes fulvus (Scop. ex Fr.) Gill., brown heart rot. Widespread.
F. igniarius (L. ex Fr.) Kickx, heart rot. Mo.
Leptothyrium pomi (Mont. & Fr.) Sacc., fly speck (on fruit). Ill.
Monilinia fructicola (Wint.) Honey, blossom blight, brown rot. General.
Phyllosticta circumscissa Cke., leaf spot. Calif., Ill.
P. virginiana (Ell. & Hals.) Seaver. Iowa, Kans.
Phytomonas pruni (EFS.) Bergey, bacterial leaf spot. Mo., N.Car., Ohio.
Podosphaera oxyacanthae (DC.) DBy., powdery mildew. Widespread.
(Sclerotinia fructicola (Wint.) Rehm): Monilinia fructicola.
Septoria pruni Ell., leaf spot. Kans., Ky., Nebr., N.Dak.
S. purpureocincta Ell. & Ev. Kans.
Taphrina communis (Sadeb.) Gies, pockets (bladder) of fruit; also (as T. decipiens (Atk.) Gies.)hypertrophy of leaves & shoots. Widespread.
T. longipes (Atk.) Gies., pockets. Mich., N.Y.
T. mirabilis (Atk.) Gies., hypertrophy of buds & shoots. N.Car. to Miss., Ill., Iowa, Wis.
Tranzschelia pruni-spinosae (Pers.) Diet., rust (II,III). Widespread, especially in the South. (Only the var. typica (Fisch.) Dunegan definitely identified.)
Mosaic, -- undet. virus. Minn.

PRUNUS ANGUSTIFOLIA Marsh., under P. MUNSONIANA.

PRUNUS ARMENIACA L., APRICOT. Tree of W. Asia, cult. Zone V, chiefly Calif. Also P. MUME (Sieb.) Sieb. & Zucc., JAPANESE APRICOT, cult. in the Far South.

Alternaria sp., blossom end rot, fruit spot. Calif.

PRUNUS -- continued.

Armillaria mellea Vahl ex Fr., root rot. Calif., Texas.
Botrytis cinerea Pers., green fruit rot (secondary), gummosis. Calif.
Cercospora circumscissa Sacc., leaf spot. Texas.
Cladosporium carpophilum Thüm., scab, freckle (on fruit), twig canker. Widespread.
Clitocybe tabescens (Scop. ex Fr.) Bres., root rot. Fla.
Coccomyces sp. (Cylindrosporium padi auth.), leaf spot. Calif., Mass., Texas, Vt.
Coryneum carpophilum (Lév.) Jauch, shoot blight, fruit spot. Widespread.
Cytospora spp. (especially C. leucostoma Sacc.), dieback, twig canker, or secondary. Ariz., N.Y. (Conidial stage of Valsa sp.)
Dibotryon morbosum (Schw.) Theiss. & Syd., black knot. Colo., N.Y.
Diplodia sp. (? D. natalensis Pole-Evans), on twigs. Calif.
Erwinia amylovora (Burr.) Winslow et al., fire blight. Colo., Fla., Nebr., Pa., Texas.
Heterodera marioni (Cornu) Goodey, root knot. Ariz., Texas.
Monilinia fructicola (Wint.) Honey, brown rot usually of ripe fruit, sometimes blossom blight. Widespread, but less common on this host in the Pacific Coast States than the following.
M. laxa (Aderh. & Ruhl.) Honey, blossom & twig blight, brown rot of green & ripe fruit. Pacific Coast States.
Monochaetia rosenwaldia Khazanoff, trunk & limb gall. Calif.
Nectria cinnabarina Tode ex Fr., coral spot, die back. Ind., Wash.
Phyllosticta circumscissa Cke., leaf spot. Calif.
Phymatotrichum omnivorum (Shear) Dug., root rot. Ariz., Okla., Texas.
Phytomonas pruni (EFS.) Bergey, bacterial leaf spot, black spot. Ill. to Texas and Nebr.
P. syringae (van Hall) Bergey, bacterial canker, gummosis. Calif., Oregon.
P. tumefaciens (EFS. & Town.) Bergey, crown gall. Widespread. (P. mume is resistant).
Phytophthora cactorum (Leb. & Cohn) Schroet. and P. citrophthora (R.E. & E.H. Smith) Leonian, trunk canker. Calif.
Podosphaera oxyacanthae (DC.) DBy., powdery mildew. Calif., Iowa.
Schizophyllum commune Fr., heart rot, usually following freezing injury. Texas, Wash.
Sclerotinia sclerotiorum (Lib.) DBy., green fruit rot, twig blight. Calif.
Septobasidium pseudopedicellatum Burt, on scale insects infesting bark. Miss.
Sphaerotheca pannosa (Wallr.) Lév. var. persicae Wor., powdery mildew. N.Y.
Stereum purpureum Pers., silver leaf. Calif.
Taphrina (? deformans (Berk.) Tul.), leaf curl. S.Car.
Trametes hispida Bagl., heart rot. Colo.
Tranzschelia pruni-spinosae (Pers.) Diet., rust (II,III). Calif., Miss., N.Mex., Texas. Both discolor and typica vars. reported.

PRUNUS -- continued.

Valsa leucostoma Pers. ex Fr., die back, twig canker. Mo., Texas.
Venturia (? cerasi Aderh.), fruit spot. Ky.
Verticillium albo-atrum Reinke & Berth., black heart, wilt. Calif.
Physiological diseases.
Arsenical injury. Calif.
Chlorosis, -- alkali injury, mineral deficiency. Ariz., Calif., Texas.
Exanthema, -- copper deficiency. Calif.
Gummosis ("sour sap"), -- adverse soil & moisture relations; sometimes infection by Phytomonas syringae. Ariz., Calif., N.J., Wash.
Little leaf, -- mineral deficiency ?zinc. Calif.
Mottle leaf, -- manganese deficiency. Calif.
Virus diseases.
Mosaic, undet. virus. Calif., Colo., Wash.
Ring spot, undet. virus, possibly same as preceding. Wash.
Winters peach mosaic, undet. virus. Calif.
Yellows, Prunus virus 1 Kunkel ex Smith (Chlorogenus persicae var. vulgaris Holmes). Occasional in Eastern States.
Susceptibility experimentally demonstrated to peach rosette (Prunus virus 2 McClintock ex Smith, Nanus rosettae Holmes), and to peach mosaic (Prunus virus 5 Hutchins ex Smith, Marmor persicae Holmes).

PRUNUS AVIUM L., SWEET CHERRY. Tree of Europe and W. Asia, cult. in numerous hort. vars. in Zone III; also the primitive form known as Mazzard naturalized in Growth Regions 27 & 28 and used as an understock. P. MAHALEB L., MAHALEB CHERRY, also used as an understock, is included.

Alternaria sp., fruit rot. Calif., Idaho, Mich.
A. citri Ell. & Pierce var. cerasi Rudolph, leaf spot. Calif.
Armillaria mellea Vahl ex Fr., root rot. Okla., Oregon.
Botrytis cinerea Pers., gray mold rot. Calif.
Cercospora circumscissa Sacc., leaf spot. Ohio, N.J., Pa., Texas.
Cladosporium sp., fruit rot. Calif. to Wash. & Idaho.
Coccomyces hiemalis Higgins, leaf blight, shot-hole. General.
Coryneum carpophilum (Lév.) Jauch, shoot blight, shot-hole. Idaho, Oregon, Wash.
Dermatea cerasi Pers. ex Fr., on twigs. Alaska, Oregon.
Dibotryon morbosum (Schw.) Theiss. & Syd., black knot. Del. to Mich. & N.Car.
Erwinia amylovora (Burr.) Winslow et al., fire blight (chiefly on fruit). Oregon, Wash.
Monilinia fructicola (Wint.) Honey, brown rot, blossom blight. General.
M.laxa Aderh. & Ruhl., blossom & twig blight, brown rot. Oregon, Wash.
Mycosphaerella cerasella Aderh., leaf spot. Ga. to Fla. & Miss.
Phyllosticta pruni-avium Allesch., leaf spot. Oregon.
Phytomonas pruni (EFS.) Bergey, bacterial spot, black spot, canker. N.Y. to Mich., Ga. and Texas.

PRUNUS -- continued.

P. syringae (van Hall) Bergey, bacterial canker, gummosis. Mass. to Mich. & Mo., Pacific Coast States.
P. tumefaciens (EFS. & Town.) Bergey, crown gall. Calif., Texas.
Phytophthora cactorum (Leb. & Cohn) Schroet. and P. citrophthora (R. E. & E.H. Smith) Leonian, collar & trunk canker. Calif.
Podosphaera oxyacanthae (DC.) DBy., powdery mildew. Occasional.
Polyporus spp. (P. hirsutus Wulf. ex Fr., P. lacteus Fr. and P. versicolor L. ex Fr.), heart rot. Oregon.
Poria ambigua Bres., root & butt rot. Calif.
Septobasidium retiforme Couch, felt. Ga.
Taphrina cerasi (Fckl.) Sadeb., witches'-broom. N.Y., Pa., Texas, Pacific Northwest.
Tranzschelia pruni-spinosae (Pers.) Diet., rust (II,III). N.Y., Okla.
Physiological diseases.
Chlorosis, -- alkali injury. Calif., Texas.
Virus diseases.
Buckskin, undet. virus, possibly Marmor lacerans Holmes of peach yellow-red virosis. (P. mahaleb is resistant.)
Crinkle, undet. virus (possibly identical with vein-clearing). Idaho, Wash.
Mosaic, undet. virus. Calif.
Mottle-leaf, Prunus virus 7 (Marmor cerasae) Zeller & Evans. Idaho, Oregon, Wash., ? Calif.
Rusty mottle, Marmor rubiginosum Reeves. Wash.
Vein-clearing, Prunus virus 8 (Marmor nerviclarens) Zeller & Evans. Oregon, Wash., ? Calif. Resembles crinkle (? virus) and "unproductive type" reported in Wash. & Calif. respectively.
Susceptibility experimentally demonstrated to almond calico (undet. virus), peach rosette (Prunus virus 2 McClintock ex Smith, Nanus rosettae Holmes), and to Winters peach mosaic (undet. virus).

PRUNUS BESSEYI Bailey, under P. PUMILA
PRUNUS CARCLINIANA Ait., under P. LAUROCERASUS
PRUNUS CERASIFERA Ehrh., under P. DOMESTICA

PRUNUS CERASUS L., SOUR CHERRY, including var. AUSTERA L., MORELLO CHERRY. Tree of S.E. Europe and W. Asia, cult. for fruit and for ornament in numerous vars. Zone III, also naturalized in Growth Regions 22, 25, 27.

Alternaria sp., fruit rot. Mich.
Botrytis cinerea Pers., gray mold of fruit. Occasional.
Cercospora circumscissa Sacc., leaf spot. N.J., Texas.
Cladosporium carpophilum Thüm., scab, fruit-crack. Iowa, N.J., N.Y.
Coccomyces hiemalis Higgins (Cylindrosporium hiemalis Higgins), leaf spot, shot-hole. General.
Coryneum carpophilum (Lév.) Jauch, leaf blight. Calif., Wash.

PRUNUS -- continued.

Dermatea cerasi Pers. ex Fr., on branches. N.J., N.Y.
Dibotryon morbosum (Schw.) Theiss. & Syd., black knot. Eastern States.
Glomerella cingulata (Ston.) Spauld. & Schrenk, fruit rot. Ind.
Heterodera marioni (Cornu) Goodey, root knot. Md.
Monilinia fructicola (Wint.) Honey, brown rot. General.
M. laxa (Aderh. & Ruhl.) Honey, blossom blight, brown rot. Oregon, Wash.
Mycosphaerella cerasella Aderh. (Cercospora cerasella Sacc.), leaf spot. Va. to Fla. & Miss.
Pestalotia (Pestalozzia) adusta Ell. & Ev., on leaves (secondary). N.Y.
Phomopsis padina (Sacc. & Roum.) Died., canker, twig blight. N.Y., Pa. (Conidial stage of Diaporthe decorticans (Lib.) Sacc. & Roum.)
Phyllosticta circumscissa Cke., leaf spot. N.J.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Phytomonas pruni (EFS.) Bergey, bacterial leaf spot, black spot. N.Y. to Mo. & Iowa.
P. syringae (van Hall) Bergey, bacterial gummosis. Colo., N.Y., Oregon, Wash.
P. tumefaciens (EFS. & Town.) Bergey, crown gall. Calif., Wash.
Podosphaera oxyacanthae (DC.) DBy., powdery mildew. General.
Stereum purpureum Pers., silver leaf. N.Y.
Taphrina cerasi (Fckl.) Sadeb., witches'-broom. Me. to N.J. and Minn.
Tranzschelia pruni-spinosae (Pers.) Diet., rust (II,III). N.Car.
Xylaria sp., root rot. Tenn.
Physiological diseases.
Brown bark spot, -- cause unknown, arsenical poisoning ?. Idaho, Mont., Wash.
Virus diseases.
Mosaic, undet. virus. Calif.
Pink fruit (bitter fruit), virus ?, possibly identical with buckskin disease of sweet cherry. Idaho, Wash.
Yellows (yellow leaf, leaf drop), undet. virus. Mich., N.Y., Wis.
Susceptibility to viruses of buckskin and mottle leaf of sweet cherry, and of peach rosette also demonstrated.

PRUNUS COMMUNIS. See AMYDALUS COMMUNIS
(PRUNUS DEMISSA (Nutt.) Walp.): P. VIRGINIANA var. DEMISSA

PRUNUS DOMESTICA L., GARDEN PLUM. Tree of Europe and W. Asia, cult. for fruit in many forms, Zone IV; including P. INSITITIA L., DAMSON, and P. SPINOSA L., BLACKTHORN or SLOE, cult. in same range and also locally naturalized in the East. Other garden plums included here are: P. SALICINA Lindl., JAPANESE PLUM, cult. for fruit in Zone III; P. CERASIFERA Ehrh., MYROBALAN PLUM, grown chiefly as an understock; and P. C. var. ATROPURPUREA Jaeg. PURPLELEAF PLUM, grown for ornament, Zone III.

PRUNUS -- continued.

Alternaria sp., green mold of fruit. Oregon.
Armillaria mellea Vahl ex Fr., root rot. Widespread.
Botrytis cinerea Pers., gray mold of fruit. Calif., Wash.
Cercospora circumscissa Sacc., leaf spot. Calif., Fla., Mass., Texas, Wash.
Cladosporium sp., green mold of fruit. Idaho, Oregon.
C. carpophilum Thüm., scab. Widespread.
Coccomyces prunophorae Higgins (Cylindrosporium prunophorae Higgins) leaf spot, shot-hole. Widespread.
Coryneum carpophilum (Lév.) Jauch, leaf blight, shot-hole. Calif. to Idaho & Wash.
Dermatea cerasi Pers. ex Fr., on branches. N.Y.
Dibotryon morbosum (Schw.) Theiss. & Syd., black knot. Widespread, except in far West.
Diplodia spp. (D. pruni Fckl., D. vulgaris Lév. and others), twig blight (secondary). Fla, N.J. Conidial stage of Physalospora, probably P. obtusa.
Erwinia amylovora (Burr.) Winslow et al., fire blight. Occasional.
Fomes applanatus (Pers. ex Fr.) Gill., collar & root rot, white mottled heart rot. Oregon.
F. fulvus (Scop. ex Fr.) Gill., brown heart rot. Widespread.
F. pinicola (Sw. ex Fr.) Cke. and F. subroseus (Weir) Overh., brown pocket rot. Pacific Northwest.
Heterodera marioni (Cornu) Goodey, root knot. Fla.
Lenzites sepiaria Wulf. ex Fr., brown heart rot. Pacific Northwest.
Monilinia fructicola (Wint.) Honey, brown rot, blossom blight. General.
M. laxa (Aderh. & Ruhl.) Honey, blossom & twig blight, brown rot. Calif., Oregon, Wash.
Phyllosticta circumscissa Cke., leaf spot. Iowa, Wash.
P. congesta Heald & Wolf, blotch (fruit, leaves & twigs). Ga., Texas. (On P. salicina; said to be a Phyllostictina, conidial stage of a Guignardia.)
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Phytomonas pruni (EFS.) Bergey, bacterial spot, blackspot. Eastern & Southern States to Wis. & Texas.
P. syringae (van Hall) Bergey, gummosis, shoot blight. Calif., Oreg.
P. tumefaciens (EFS. & Town.) Bergey, crown gall. Widespread.
Phytophthora cactorum (Leb. & Cohn) Schroet., bark canker. Calif., Ind.
Podosphaera oxyacanthae (DC.) DBy. and var. tridactyla (Wallr.) Salm., powdery mildew. Occasional.
Polyporus hirsutus Wulf. ex Fr. and P. versicolor L. ex Fr., white pocket heart rot. Widespread.
Stereum purpureum Pers., silver leaf, heart rot. Wash.
Taphrina spp., leaf curl, witches'-broom. Occasional. (Spp. reported include T. decipiens (Atk.) Gies., T. deformans (Berk.) Tul., T. insititiae (Sadeb.) Johans., T. mirabilis (Atk.) Gies, but with inconclusive determinations.)
T. pruni (Fckl.) Tul., pockets. Widespread.

PRUNUS -- continued.

Tranzschelia pruni-spinosae (Pers.) Diet., rust (II,III). Widespread, especially in the Southern and Pacific Coast States. (Both discolor and typica vars. are recorded.)
Valsa leucostoma Pers. ex Fr., die back, canker. Widespread.
Verticillium albo-atrum Reinke & Berth., black heart, seedling wilt. Calif.
Physiological diseases.
Brown bark spot, -- cause unknown, ? arsenical poisoning. Mont.
Chlorosis, -- mineral deficiency, alkaline soil. Calif., Idaho.
Exanthema, -- copper deficiency. Calif., Fla.
Gum spot (drought spot), -- irregularity of moisture supply. N.Y., Pacific Northwest.
Virus diseases.
Diamond canker, undet. virus. Calif. Limited to Agen var. of P. domestica.
Line pattern virosis (Marmor lineopticum Cation). Mich., Ohio, ? Calif., ? Ky.
Mosaic (? pox), one or more viruses distinguished in part as Prunus virus 1 Thomas & Hildebrand ex Smith on P. domestica in N.Y. & ? Ky., and in part as the preceding virus; also undifferentiated, in Calif., Ky., Ill., Minn. and Wash. Symptoms often masked in P. salicina vars.
Vein-clearing, Prunus virus 8 (Marmor nerviclarens) Zeller & Evans. Oregon, Wash.
Yellows, Prunus virus 1 Kunkel ex Smith (Chlorogenus persicae var. typica Holmes). Occasional in Eastern States.
Susceptibility also demonstrated to viruses of little peach (Prunus virus 1 A EFS. ex Smith, Chlorogenus persicae var. micropersica Holmes); peach rosette (Prunus virus 2 McClintock ex Smith, Nanus rosettae Holmes); peach mosaic (Prunus virus 5 Hutchins ex Smith, Marmor persicae Holmes). Symptoms often masked in P. salicina vars.

PRUNUS EMARGINATA (Hook.) Walp., under P. PENSYLVANICA.
PRUNUS GLANDULOSA Thunb., under P. TRILOBA
PRUNUS GRACILIS Engelm. & Gray, under P. MUNSONIANA.
PRUNUS HORTULANA Bailey, under P. MUNSONIANA.
PRUNUS ILICIFOLIA (Nutt.) Walp., under P. LAUROCERASUS
PRUNUS INSITITIA L., under P. DOMESTICA.
PRUNUS JAPONICA Thunb., under P. TRILOBA.

PRUNUS LAUROCERASUS L. (Laurocerasus officinalis Roem.), ENGLISH CHERRY-LAUREL (LAURELCHERRY), and P. LUSITANICA L., PORTUGAL-LAUREL. Evergreen shrubs or small trees of Europe and Asia Minor, cult. for ornament, Zone VI-VII. Also P. CAROLINIANA Ait., CAROLINA CHERRY-LAUREL (LAUREL-CHERRY), of Growth Regions 20, 29, 30; P. ILICIFOLIA (Nutt.) Walp., HOLLYLEAF CHERRY, of G.R.'s 1, 3, 4, 5; and P. LYONI (Eastw.) Sarg., CATALINA CHERRY of G.R. 5.

PRUNUS -- continued.

Alternaria sp., leaf spot. Texas.
Cercospora circumscissa Sacc., leaf spot. Calif.
C. cladosporioides Sacc., leaf spot. La., Texas.
Clitocybe tabescens (Scop. ex Fr.) Bres., root rot. Fla.
Coccomyces lutescens Higgins, leaf spot. Miss.
Monilinia fructicola (Wint.) Honey and M. laxa (Aderh. & Ruhl.) Honey, blossom blight, brown rot. Calif.
Phyllachora beaumontii (Berk. & Curt.) Cke., leaf spot. Ala.
Phyllosticta laurocerasi Sacc. & Speg., leaf spot. Calif., Fla.
Phytomonas pruni (EFS.) Bergey, bacterial spot. Ga., Miss., N.J., S. Car.
Septoria ravenelii Thüm., leaf spot. S.Car.
Verticillium albo-atrum Reinke & Berth., wilt. Calif.

PRUNUS MARITIMA Marsh. BEACH PLUM. Shrub of coastal areas Me. to Va., sometimes cult. for fruit. Also P. ALLEGHANIENSIS Porter, ALLEGHANY PLUM, of similar range inland; P. UMBELLATA Ell. FLATWOODS PLUM, of coastal areas, N.Car. to Texas; and P. SUBCORDATA Benth., PACIFIC PLUM, KLAMATH PLUM, occurring in Oregon & Calif., sometimes grown for fruit.

Cylindrosporium sp., leaf spot. Fla.
Dibotryon morbosum (Schw.) Theiss. & Syd., black knot. Ala., Mass., N.Y., Oregon.
Monilinia fructicola (Wint.) Honey, brown rot, twig blight. Calif.,Fla.
Phytomonas pruni (EFS.) Bergey, bacterial spot. Fla.
Podosphaera oxyacanthae (DC.) DBy., powdery mildew. Md., Fla.
Taphrina communis (Sadeb.) Gies. (? T. mirabilis Atk.), pockets. Mass. to Fla.
T. pruni-subcordatae (Zeller) Mix, pockets, witches'-broom. Calif., Oregon. On P. subcordata.
Tranzschelia pruni-spinosae (Pers.) Diet., rust (II,III). Calif.,Fla.

(PRUNUS MELANOCARPA (Nels.) Rydb.): P. VIRGINIANA var. MELANOCARPA.
PRUNUS MEXICANA S. Wats., under P. MUNSONIANA

PRUNUS MUNSONIANA Wight & Hedr., WILDGOOSE PLUM. Tree of Growth Regions 20, 22, 25, 29; cult. Zone V. Also P. ANGUSTIFOLIA Marsh., CHICKASAW PLUM of G.R.'s 20, 22, 25, 28, 29, 30; P. GRACILIS Engelm. & Gray, OKLAHOMA PLUM of G.R.'s 16, 22, 25; P. HORTULANA Bailey, HORTULAN PLUM of G.R.'s 22, 25, 27, 29; P. MEXICANA Wats., MEXICAN PLUM, of G.R.'s 19, 20, 22, 25, 29, 30.

Cercospora circumscissa Sacc., leaf spot. Kansas.
Cladosporium carpophilum Thüm., scab. Iowa.
Coccomyces prunophorae Higgins (Cylindrosporium prunophorae Higgins), leaf spot. Ark., Ind., Iowa.

PRUNUS -- continued.

Corticium stevensii Burt, thread blight. Fla.
Diaporthe decorticans (Lib.) Sacc. & Roum., canker. Iowa.
Dibotryon morbosum (Schw.) Theiss. & Syd., black knot. Ala., Miss.
Fomes fulvus (Scop. ex Fr.) Cke., brown heart rot. Iowa, Va.
Leptothyrium pomi (Mont. & Fr.) Sacc., fly speck. Mo.
Monilinia fructicola (Wint.) Honey, brown rot. General.
Phoradendron flavescens (Pursh.) Nutt., mistletoe. Southern States.
Phyllosticta congesta Heald & Wolf, leaf blotch. Texas.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Physalospora obtusa (Schw.) Cke., on branches. Ala.
Phytomonas pruni (EFS.) Bergey, bacterial spot. Mo., Ohio.
Podosphaera oxyacanthae (DC.) DBy., powdery mildew. Md., Nebr.
Taphrina sp. (? T. communis (Sadeb) Gies., ? T. pruni (Fckl.) Tul.), pockets. Ala. to Okla. & Kans., Minn., S.Dak.
T. mirabilis (Atk.) Gies., bud & shoot hypertrophy. N.Y. to Ala., Texas & Iowa. Also var. tortilis Atk., on fruit. Ga., Md.
Tranzschelia pruni-spinosae (Pers.) Diet., rust (II,III). Central & Southern States. (The var. discolor recorded on P. hortulana and P. mexicana; var. typica on others in this host group.)

PRUNUS NIGRA Ait., under P. AMERICANA.

PRUNUS PENSYLVANICA L.f.* PIN CHERRY. Small tree of Growth Regions 13, 15, 18, 21, 23, 24, 26, 27:also P. EMARGINATA (Dougl.) Walp., BITTER CHERRY, of G.R.'s 1, 2, 4, 6, 8, 9, 10, 11, 12, 13, 14; both sometimes cult. for ornament or food for wildlife.

Armillaria mellea Vahl ex Fr., root rot. Wash.
Cercospora circumscissa Sacc., leaf spot. Wis.
Coccomyces hiemalis Higgins (Cylindrosporium hiemalis Higgins), leaf spot. Widespread. On P. pensylvanica.
C. lutescens Higgins. Mont., Wash. On P. emarginata.
Coryneum carpophilum (Lév.) Jauch, leaf spot. Idaho.
Dermatea cerasi Pers. ex Fr., on branches. Widespread.
Dibotryon morbosum (Schw.) Theiss. & Syd., black knot. Widespread.
Fomes fulvus (Scop. ex Fr.) Gill., brown heart rot. Tenn.
Mycosphaerella nigerristigma Higgins, on leaves. Ga., Miss.
Nectria sp., branch & trunk canker. Vt.
N. cinnabarina Tode ex Fr., coral spot, die back. N.Car., Tenn., Wash.
Phyllosticta congesta Heald & Wolf, leaf spot. Wis.
P. virginiana (Ell. & Hals.) Seaver. Me.
Podosphaera oxyacanthae (DC.) DBy. and var. tridactyla, powdery mildew. Ill., Pa., Wash., Wis.

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* The spelling "pensylvanica" is authentic and is employed by some authorities, but the more natural "pennsylvanica" is favored by others.

PRUNUS -- continued.

Taphrina sp., pockets. N.Dak., Vt., Wash.
T. cerasi (Fckl.) Sadeb., witches'-broom. N.H.
T. flectans Mix, witches'-broom. Calif., Wash. On P. emarginata.
T. insititiae (Sadeb.) Johans., witches'-broom. Me. to Wis., Colo.
Tranzschelia pruni-spinosae (Pers.) Diet., rust (II,III). Ill., Iowa, Wis.
Mottle leaf, Prunus virus 7 (Marmor cerasi) Zeller & Evans. Oregon, Wash.
Yellows, undet. virus. Wis.

PRUNUS PUMILA L., SAND CHERRY. Shrub of Growth Regions 15, 18, 21, 23, 24, 26, 27, 28. Also P. BESSEYI Bailey, WESTERN SAND CHERRY, in G.R.'s 15, 16, 18, 19, 23; cult. for fruit and hybridized with plums, Zone III.

Cercospora circumscissa Sacc., leaf spot. Del.
Coccomyces hiemalis Higgins, leaf spot. Wis.
Dibotryon morbosum (Schw.) Theiss. & Syd., black knot. N.Dak., Wis.
Monilinia fructicola (Wint.) Honey, brown rot, twig blight. General.
Phytomonas pruni (EFS.) Bergey, bacterial spot. Iowa, Ohio.
P. tumefaciens (EFS. & Town.) Bergey, crown gall. Minn.
Podosphaera oxyacanthae (DC.) DBy., powdery mildew. North Central States.
Taphrina communis (Sadeb.) Gies., pockets, leaf curl. N.Y. to Kans. & N.Dak.
T. farlowii Sadeb., pockets. N.Y.
T. flavorubra Ray, pockets, shoot hypertrophy. N.Y. On P. pumila var. susquehanae (Willd.) Jaeg.
Tranzschelia pruni-spinosae (Pers.) Diet., rust (II,III). Iowa, Kans., Minn., S.Dak., Wis. Both discolor and typica vars. recorded.
Virus diseases.
Susceptibility to yellow-red virosis (Marmor lacerans Holmes) experimentally shown.

PRUNUS SALICINA Lindl., under P. DOMESTICA

PRUNUS SEROTINA Ehrh., BLACK CHERRY. Large tree of Growth Regions 11, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30; cult. for ornament and fruit, Zone III. A few records on the var. SALICIFOLIA (Kunth) Koehne, of Mexico & southward, cult. Zone VI, and on P. PADUS L., EUROPEAN BIRD CHERRY, cult. for ornament in Zone III, are included.

Armillaria mellea Vahl ex Fr., root rot. N.H.
Cercospora circumscissa Sacc., leaf spot. Widespread.
Coccomyces lutescens Higgins (Cylindrosporium lutescens Higgins), leaf spot. Widespread.
Dermatea cerasi Pers. ex Fr., on branches. N.Y.

PRUNUS -- continued.

Diaporthe pennsylvanica (Berk. & Curt.) Weh., on branches. N.Y.
D. pruni Ell. & Ev., twig canker. Iowa, Mass., Mich., N.Y.
D. tuberculosa (Ell.) Sacc. var. pruni Dearn. & House. N.Y.
Dibotryon morbosum (Schw.) Theiss. & Syd., black knot. Widespread.
Dothichiza serotina Atk., on leaves. Ala., W.Va.
Fomes fomentarius (L. ex Fr.) Kickx and F. pinicola (Sw. ex Fr.) Cke., trunk rot. N.E. States.
Monilinia fructicola (Wint.) Honey, brown rot. Widespread.
M. seaveri (Rehm) Honey (Monilia seaveri Reade), twig blight, seedling blight. Vt. to Ga., Ark. & Iowa.
Mycosphaerella cerasella Aderh., leaf spot. N.Y.
Nectria sp., canker. N.Y.
Pestalotia adusta Ell. & Ev., on leaves. N.Y., Va.
Pezizella oenotherae (Cke. & Ell.) Sacc., on twigs. Va.
Phoradendron flavescens (Pursh) Nutt., mistletoe. Southern States.
Phyllosticta serotina Cke., leaf spot. Widespread.
P. virginiana (Ell. & Hals.) Seaver. Iowa, Kans.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Podosphaera oxyacanthae (DC.) DBy., powdery mildew. N.Y. to Mich. & Nebr.
Polyporus spp. (especially P. dryophilus Berk., P. hirsutus Wulf. ex Fr., P. sulphureus Bull. ex Fr. and P. versicolor L. ex Fr., sapwood and heart rot. Widespread.
Stereum rameale Schw., trunk rot. N.Y., Pa.
Taphrina farlowii Sadeb. (T. varia (Atk.) Mix), hypertrophy of fruit, leaves & shoot. Vt. to Fla. & Texas.
Tranzschelia pruni-spinosae (Pers.) Diet., rust (II,III). Mass. to Ga., Texas & Nebr. Only var. typica recorded.
Valsa leucostoma Pers. ex Fr., twig canker, dieback. Widespread.

PRUNUS SERRULATA Lindl., ORIENTAL CHERRY. Large tree of E. Asia, cult. in many vars. for ornament. Other spp. of flowering cherries included here are P. SARGENTII Rehd., P. SIEBOLDII (Carr.) Wittm., P. SUBHIRTELLA Miq., HIGAN CHERRY, and P. YEDOENSIS Matsum., YOSHINO CHERRY; all of Japan and cult. in numerous vars.

Catenophora pruni Luttrell, on twigs. N.Car.
Cercospora circumscissa Sacc., leaf spot. N.Y.
Cladosporium carpophilum Thüm., scab. Miss.
Coccomyces hiemalis Higgins, leaf spot. Mass., N.J.
Erwinia amylovora (Burr.) Winslow et al., fire blight. Ga., Ohio.
Phytomonas pruni (EFS.) Bergey, bacterial spot. N.Y.
Taphrina cerasi (Fckl.) Sadeb., witches'-broom. Md., N.J.
Vein-clearing, Prunus virus 8 (Marmor nerviclarens) Zeller & Evans. Oregon

PRUNUS SUBCORDATA Benth., under P. MARITIMA.
PRUNUS SUBHIRTELLA Miq., under P. SERRULATA.

PRUNUS -- continued.

PRUNUS TOMENTOSA Thunb., under P. TRILOBA.
(PRUNUS TRIFLORA Roxb.): P. SALICINA

PRUNUS TRILOBA Lindl., FLOWERING ALMOND. Small tree or shrub of China, cult. for ornament, Zone V. Several horticulturally similar ornamental spp. as P. TOMENTOSA Thunb., NANKING CHERRY, and P. GLANDULOSA Thunb., DWARF FLOWERING ALMOND, are included.

Armillaria mellea Vahl ex Fr., root rot. Miss.
Botrytis cinerea Pers., blossom & twig blight. N.Y.
Erwinia amylovora (Burr.) Winslow et al., twig blight. Ind.
Monilinia fructicola (Wint.) Honey, blossom & twig blight, brown rot. Conn., Kans.
Phytomonas pruni (EFS.) Bergey, bacterial spot. N.J.
Podosphaera oxyacanthae (DC.) DBy., powdery mildew. Iowa.

PRUNUS VIRGINIANA L., COMMON CHOKECHERRY. Shrub or small tree of Growth Regions 21, 22, 23, 24, 25, 26, 27, 28, 29, 30; including the WESTERN CHOKECHERRIES, P. V. var. DEMISSA (Torr. & Gray) Torr. of the Pacific Coast, and var. MELANOCARPA (A. Nels.) Sarg. of the Great Plains and Rocky Mts. States.

Cercospora circumscissa Sacc., shot-hole, leaf spot. N.E. States; N.Dak. to Kans. & Mont.
Coccomyces lutescens Higgins (Cylindrosporium lutescens Higgins), shot-hole, leaf spot. General.
Cylindrosporium nuttallii (Harkn.) Dearn. (? C. lutescens), leaf spot. On P. demissa. Oregon.
Cytospora chrysosperma Pers. ex Fr., on twigs, ? canker. Mont.
Dermatea cerasi Pers. ex Fr., on branches. Mass., N.Dak.
Dibotryon morbosum (Schw.) Theiss. & Syd., black knot. General.
Fomes fulvus (Scop. ex Fr.) Gill., brown heart rot. N. & S. Dakota.
Gloeosporium prunicolum Ell. & Ev., leaf spot. N.Y., Wis.
Heterodera marioni (Cornu) Goodey, root knot.
Lophodermina prunicola Tehon, tar spot. On P. v. var. melanocarpa. Colo.
Melanconium cerasinum Pk., on branches. Kans., N.Dak.
Monilia angustior (Sacc.) Reade, shoot & fruit blight. Vt. to Kans. & N.Dak. Conidial stage of Sclerotinia angustior Reade (= Monilinia padi (Wor.) Honey ?)
Monilinia demissa (Dana) Honey, shoot & fruit blight. On P. demissa. Wash. (Distinction from preceding, especially on P.v. var. melanocarpa in N.Dak., Idaho & Utah, doubtful. Reports of M. fructicola (Wint.) Honey and M. seaveri (Rehm) Honey on these hosts are doubtful.)
Mycosphaerella cerasella Aderh. (Cercospora cerasella Sacc.), leaf spot. Kans.

PRUNUS -- continued.

Myxosporium pruni (Pk.) Dearn. & House, on branches. N.Y.
Nectria cinnabarina Tode ex Fr., on branches, often following black knot. Widespread.
Phyllactinia corylea Pers. ex Karst., powdery mildew. Wash.
Phyllosticta circumscissa Cke., leaf spot. Kans., Wash.
P. serotina Cke. Nebr., Pa., S.Car.
P. virginiana (Ell. & Hals.) F. Tassi, leaf blotch. N.Y. to Kans. & Mont. (Has been reported as P. destruens Desm. and P. prunicola Sacc.)
Physalospora obtusa (Schw.) Cke., on branches. Kans., N.Y.
Phytomonas pruni (EFS.) Bergey, bacterial spot. Ill., N.Y., Mont., Wyo.
Podosphaera oxyacanthae (DC.) DBy., powdery mildew. Widespread.
(Sclerotinia angustior Reade): ? Monilinia padi
(S. demissa Dana): Monilinia demissa
Septoria pruni Pk., leaf spot. Mich.
Taphrina confusa (Atk.) Gies. (T. unilateralis (Pk.) Mix), hypertrophy of leaf, fruit & shoot. Widespread, including Western States. (Various Taphrina spp. reported on these hosts, including T. cecidimophila (Atk.) Gies, on fruit galls, probably belong here.)
Tranzschelia pruni-spinosae (Pers.) Diet., rust (II,III). Conn. to Ill. & Wis.
Valsa cincta Fr. and V. leucostoma Pers. ex Fr., on branches. Kans., Mont., N.Dak.
Yellow-red virosis, Marmor lacerans Holmes. N.H. to Va., Ill. & Wis.; on var. demissa in Oregon, and on var. melanocarpa in Utah & Idaho. (Susceptibility experimentally demonstrated to the cherry buckskin and cherry yellows viruses.)

PRUNUS YEDOENSIS, under P. SERRULATA.
(DIVISION OF MYCOLOGY AND DISEASE SURVEY).

THE USE OF SPERGON FOR SWEETPOTATO SEED AND SPROUT TREATMENTS[1]

O. H. Elmer

The present national emergency requires that more foods be produced and that losses from diseases be reduced. From the preliminary results presented it appears that Spergon may prove valuable to this end in connection with the sweetpotato. The 1941 data are presented with full realization that additional information must be obtained before a final decision can be made concerning the value of Spergon for treating sweetpotato seed or sprouts. There probably is no better way to determine

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1/ Contribution No. 431, Department of Botany, Kansas Agricultural Experiment Station.

its value quickly than that it be tried by numerous investigators over a wide range of conditions.

Investigations have been in progress in Kansas during past years to find more effective methods for treating seed sweetpotatoes before bedding and for dipping the sprouts before they are set in the field.

The recommended method for seed treatment before the roots are placed in the hotbed has been soaking for 10 minutes in one part corrosive sublimate to 1000 parts of water. The greatest objection to this treatment is the injury that frequently occurs, resulting in fewer sprouts being produced.

Past seasons' sprout treatment investigations indicate clearly that infection of field-borne stem-rot fungus to newly set sprouts can be reduced when the below-ground portions are coated with certain protective fungicides. This method of preventing stem rot and other diseases has, however, not resulted in yield increases in Kansas. Bordeaux mixture and certain other fungicides usually produced injury and yield increases did not result even though stem-rot infection was reduced.

Among the fungicidal materials included in the 1941 sweetpotato seed and sprout treatment tests was Spergon, wettable grade, a fungicide manufactured by Naugatuck Chemical Division of the United States Rubber Company. This material, at a dilution of 2 ounces per gallon of water, was used as a momentary dip for seed and for sprout treatments.

Semesan Bel included in the tests was used at the rate of 2 ounces per gallon of water for seed treatments and at 1 ounce per 5 pints of water for sprout treatments. Both treatments were made as momentary dips. The sprout treatments with Semesan Bel and with Spergon were made in the field shortly before the plants were set.

Corrosive sublimate, used only as a seed treatment, was used at 1 part to 1000 parts of water with a treatment period of 10 minutes.

Results

The results obtained in 1941 indicate that Spergon may be useful as a fungicidal treatment for sweetpotato seed and sprouts. As is shown in the accompanying table, Spergon-treated sweetpotatoes produced a greater number of sprouts than did the untreated controls or the lots treated with corrosive sublimate or Semesan Bel. It appears probable that Spergon produced a stimulatory effect on the treated sweetpotatoes. Disease or decay was not observed in the untreated controls and apparently was not the reason for the lower number of sprouts produced in these lots.

Sweetpotato Seed Treatment - 1941
Number Sprouts Produced
(Little Stem Jersey)

Seed treatment	First Hotbed 1/	Second Hotbed 2/	Total Sprouts
Spergon	1040	695	1735
Semesan Bel	548	561	1109
Corrosive Sublimate	805	183	988
Untreated Check	764	541	1305

1/ Sprouts pulled twice.
2/ Sprouts pulled once.

Sweetpotato Sprout Dip Treatments - 1941
Stem-rot Infection and Yield Data

Sprout dip treatment	Farm 1 1/			Farm 2 2/
	No. plants harvested	Percent stem rot	Bu. per A.	Bu. per A.
Spergon	329	7.0	324.2	519.2
Semesan Bel	320	10.9	269.8	465.6
Untreated	253	55.3	198.3	419.1

1/ Nancy Hall. Each plot consisted of duplicated 14-rod rows.
2/ Little Stem Jersey. Each plot consisted of a 10-rod row.

The sprout treatment tests were made in two commercial fields. The soil of Farm 1 was severely infested with the stem-rot fungus as is evident from the data showing that approximately 20 percent of the untreated plants died prior to harvest time, and that 55.3 percent of the harvested plants were infected. In contrast to this, only 10.9 percent of the Semesan Bel treated plants and 7 percent of the Spergon treated plants became infected with stem rot.

The data presented indicate that both Spergon and Semesan Bel treated sprouts produced considerably higher yields than did the untreated controls in both farm plots. The highest yields were produced following treatment with Spergon.
(KANSAS AGRICULTURAL EXPERIMENT STATION).

OBSERVATIONS ON SOME DISEASES OF TOMATOES AND OTHER VEGETABLES IN SOUTH TEXAS

A. L. Harrison and S. S. Ivanoff

A plant disease survey was made during the week of November 10 to 15 in the following counties of South and Southwest Texas: Frio, Atascosa, Zavala, Maverick, Dimmit, Webb, Zapata, and Hidalgo. Dr. G. H. Godfrey aided in the survey in the Lower Rio Grande Valley. Most of the time was spent inspecting the fall tomato crop which was just coming into production while some records were made on other vegetable crops. The first picking from the tomato fields was light with most varieties, because unusually high temperatures in September and October had caused shedding of most of the blooms. A better yield was forecast for the later pickings.

In general there were fewer fungus and bacterial leaf spots this year on tomatoes than in previous years. On the other hand the virus diseases were widely prevalent particularly in Quemado Valley (Maverick County) and at places in the Lower Rio Grande Valley. The disease that caused the most concern was one to which we tentatively have given the name "rosette."

ROSETTE was observed in every county and in every field inspected. In some cases it was causing serious losses. In one large field of nearly 200 acres near Zapata, from 50 to 90 percent of the plants were affected, resulting in a loss of at least 50 percent of the crop. Severely affected plants bore few or no marketable fruits, while those less severely affected bore some good fruits. Rosette closely resembles the published description of "bunchy top." However, since there is a total absence of external necrotic streaks on the stems and no evidence of mottling or necrosis of the leaves, except in a few cases where it might have been due to some other cause, the disease is considered to be distinct from bunchy top. The name rosette is suggested for the disease since shortening of the internodes and bunching of the foliage are the most conspicuous symptoms. The first visible symptom of the disease is a stunting of the terminal growth with a rapid development of the buds immediately below the growing point. This gives the plant a bunchy appearance. In severe cases the plant becomes a compact mass of leaves and short stems, while in milder cases the plant is more open and normal in appearance. The stems of affected plants tend to become thick and stiff. Plants with mild symptoms are not readily distinguished from normal plants. The foliage of plants affected with rosette is dark green in color. The leaves may be twisted and deformed and somewhat reduced in size, especially on badly affected plants that had probably taken the disease at an early stage. A symptom that has been more or less constantly associated with the rosette disease is an internal necrosis, usually at the nodes. These necrotic spots (which at first begin as watersoaked areas in the pith tissue) are rarely visible from the outside, though sometimes they can be seen by transmitted light as a dark green spot on the stem. By cutting the stem a brown to black spot may be seen in the pith. Frequently there is a depressed area on the side of the stem near the necrotic spot which may develop into a short crack or canker, usually not over 1-2 cm. in length and frequently much shorter. These internal necrotic spots probably are not definite diagnostic symptoms of rosette since they have been found on plants in the greenhouse that otherwise appear normal. At no time has a plant been found with rosette that had external necrotic spots or streaks of the stems and leaves as in the case of typical bunchy top. The cause of rosette is not known.

SPOTTED WILT was found on a few plants in Webb, Dimmit, Maverick, Zavala, and Atascosa Counties.

FRUIT POX was observed in several fields, but it was not causing much concern.

MOSAIC (common). Several fields in the lower Rio Grande Valley were suffering severely from mosaic, with from 80 to 100 percent of the plants affected. Mosaic was not serious in the other areas visited.

WITCHES BROOM was found on a few plants in Hidalgo, Zapata, and Maverick Counties.

"YELLOW TOP." This condition, which was first observed[1/] in several fields in 1937, was found in Hidalgo, Zapata, Webb, and Maverick

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1/ Young, P.A., Altstatt, G.E., and Harrison, A.L. Plant disease survey in Southwest Texas. Plant Disease Reporter 22:6-12. 1938.

Counties. In a few fields a high percentage of the plants were affected, while in others only occasional diseased plants were found. The cause of this disease has not been determined.

CURLY TOP. A few plants affected with curly top were found in several fields in Webb County and also in one field each in Hidalgo and Atascosa Counties.

BACTERIAL SPOT (Phytomonas vesicatoria) was severe in some fields in Maverick and Dimmit Counties. A few affected fruits were found in Hidalgo, Zapata, and Zavala Counties. However, bacterial spot was not causing much concern.

EARLY BLIGHT (Alternaria solani) was found on a few leaves in most of the fields inspected, but it was causing no noticeable loss, except in one field in Hidalgo County.

TOMATO WILT (Fusarium lycopersici) caused at least 80 percent damage in 10 acres of one large field in Webb County. Losses from a trace to 5 percent were found in several fields in Hidalgo and in one field in Atascosa County.

SOUTHERN BLIGHT (Sclerotium rolfsii) destroyed at least 45 percent of the plants in one field in Atascosa County. It was found also on a few plants in scattered fields throughout the region.

BLOSSOM END ROT and PUFF together with PHYTOPHTHORA AND RHIZOCTONIA SOIL ROTS were observed on a few fruits, but in no case were they causing appreciable damage.

ROOT KNOT (Heterodera marioni). Portions of several large fields near Laredo in Webb County were suffering severely from root knot. Root knot was found also in a few fields in Maverick County.

SHOULDER BLOTCH. A tomato fruit trouble apparently of non-parasitic origin, resembling bruises on the "shoulder" of the fruit near the stem end, was prevalent in the Winter Garden region and had caused serious losses shortly before this survey was made. This trouble has been under observation and study by the junior author for two years and a more detailed description with illustrations of this fruit abnormality will appear later.

DISEASES OF OTHER CROPS.

Beans. Common mosaic was general in several fields in Atascosa, Zapata, and Hidalgo Counties, and causing some reduction in quality and yields of beans. One large field in Zapata County was suffering severely from a root rot the cause of which was not determined.

Squash. Mosaic was affecting from 50 to 100 percent of the plants interplanted in a 50-acre tomato field in Zapata County. The crop of squash was almost a total failure. No mosaic was found on the tomato vines in the same field. Mosaic was found to be affecting about 5 percent of the plants in a field in Hidalgo County.

Potato. Traces of black leg, tip burn, and Fusarium wilt were found in one field in Hidalgo County.

Peppers. Southern blight (Sclerotium rolfsii) was causing appreciable losses in Maverick, Frio, and Zavala Counties, where as much as 50 percent of the crop in some fields had been taken by this disease. Traces of southern blight were also found in fields in Zapata County. Mosaic was present in several of the fields inspected and in one large

field in Zavala County nearly all of the plants were affected, while in most fields the disease affected from 5 to 20 per cent of the plants.

Eggplants. "Yellows" (virus) was not so prevalent as in other years. This is probably due to the fact that the disease is easily controlled by dusting with sulphur. However, from 80 to 100 percent of the plants were affected in occasional fields in Frio and Dimmit Counties. Southern blight was observed on 5 to 10 percent of the plants in one field in Frio County.

Cowpeas. Approximately 30 percent of the plants were destroyed by mosaic (apparently a strain of cucumber mosaic) in one field in Frio County.

Spinach. Scattered cases of downy mildew [Peronospora effusa] and traces of curly top were found. White rust [Albugo occidentalis] had not yet made its appearance.
(TEXAS AGRICULTURAL EXPERIMENT STATION, YOAKUM AND WINTER HAVEN).

OCCURRENCE OF TOMATO LEAF MOLD AND OF MUSKMELON POWDERY MILDEW IN THE FIELD IN NEW HAMPSHIRE

R. W. Barratt

The presence of leaf mold (Cladosporium fulvum) on tomatoes in the variety trials and breeding blocks at the University of New Hampshire Horticulture Farm was first observed on August 8. This infection rapidly spread throughout the field and by September 1 had caused serious damage. The organism is believed to have been carried out into the field on greenhouse grown seedlings. It was also reported by home gardeners in the vicinity who had obtained their plants from the greenhouse. Although a serious disease in Durham, it was not found elsewhere in the State.

During the summer of 1941, powdery mildew (Erysiphe cichoracearum) seriously damaged the breeding block at the Horticulture Farm at Durham. The organism was first seen in one corner of the field about the middle of August. By September 1 the entire field had been killed by the mildew. It is believed that the organism may have been carried into the field from the greenhouse where it is always present. It has not been found in any other portion of the State.
(NEW HAMPSHIRE AGRICULTURAL EXPERIMENT STATION).

DOWNY MILDEW ON SOYBEAN SEEDS

H. W. Johnson and C. L. Lefebvre

Seeds of the 1941 crop of Mammoth Yellow soybeans were received recently with a request for information as to the cause of their milky appearance and cracked skins. Examination revealed that the whitish crust on the wrinkled and cracked seed coats was a solid mass of downy mildew oöspores. In unstained mounts the oöspores were globose, almost

hyaline, ranged from 23 to 32 microns in diameter and had a smooth wall approximately 3 microns thick. In mounts stained with cotton blue in lacto-phenol, the epispore was in some cases irregularly reticulate. When the reticulations of the epispore were included, the oöspores were 3 to 9 microns larger than the measurements given above. No conidiophores or conidia were found in mounts from the seeds. It would appear from the oöspore characters that the downy mildew on the seeds is Peronospora manshurica (Naoumoff) Sydow. Previous reports of soybean downy mildew in this country have considered it to be strictly a foliage disease, although there are reports that the disease is seed-borne. It appears from this material, however, that downy mildew may be of economic importance on some varieties and in some years at least, because of injury to the soybean seed crop.

(DIVISION OF FORAGE CROPS AND DISEASES, BUREAU OF PLANT INDUSTRY, WASHINGTON, D. C.)

CHARCOAL ROT OF CORN AND SORGHUM IN NEBRASKA

J. E. Livingston

The sorghum acreage in Nebraska increased from 515,000 acres in 1937 to 1,942,000 acres in 1941 of which 736,000 acres were grain sorghum. Obviously with this increase in the acreage of sorghum there has been an increase in the importance of diseases of sorghum.

In September 1940, charcoal rot caused by Rhizoctonia bataticola (Taub.) Butl. was observed in the experimental sorghum plots at Lincoln. In order to obtain some idea of the severity of the disease, a limited survey of the southeastern one-fourth of Nebraska was made during October 1940. Charcoal rot was found in 71 percent of the grain sorghum fields. In some of the fields 60 percent of the heads were lying on the ground from stalk breaking. The sclerotia of the fungus were found in infected samples from all of the fields showing the disease. The disease was not found in the forage sorghums. Since it is difficult to identify charcoal rot until the plants are approaching maturity, there was a question whether the forage sorghums were actually less susceptible than the grain sorghums or were not sufficiently mature to show the disease. However, during the past two years very little charcoal rot has been observed in forage sorghums.

Observations were not made on corn in 1940. In 1941 a State-wide survey was made and charcoal rot was found in corn in all parts of the State except the Panhandle region in the west. Seventy-four per cent of the fields were infected, with from a trace to 95 percent of the stalks diseased. In many of the fields 30 to 40 percent of the stalks were infected. There appeared to be a difference in the susceptibility of corn varieties and hybrids in the test plots scattered throughout the State. Owing to differences in maturity of the varieties and hybrids, however, a direct comparison on the basis of the data obtained on the survey cannot be made.

Charcoal rot was present in 18 percent of the grain sorghum fields with one field of Colby milo in Clay County showing about 85 percent of the plants infected. In general the infection varied from 1 to 25 percent of the plants. The infected fields of sorghum were located principally in the eastern third of the State.

The disease appeared in corn fields located on many different soil types from the heavy clay soils in eastern Nebraska to the sandy soils of northern Lincoln County. It was more prevalent in eastern and central Nebraska than in the western part of the State. It appeared to be more damaging in dry-land areas or under drouth conditions than in wetter regions or under irrigation.

Sclerotia of Rhizoctonia bataticola were found in corn in all regions of the State except the Panhandle. The organism was isolated from irrigated corn near Scottsbluff. This corn showed a brownish rot at the base of the stalk. A limited number of plants were found in scattered fields throughout the Panhandle showing this basal rot but no sclerotia were present. This indicates that the disease was present in very small amounts in the Panhandle, but apparently the environmental conditions there did not favor the development of the disease and the formation of sclerotia.

Only the most susceptible varieties of grain sorghum showed sclerotia at the time of the survey. Many fields of Early Kalo grain sorghum showed rotting and shredding of the basal portion of the stalk but no sclerotia could be found.

In view of the manner in which charcoal rot developed in the experimental plots in Lincoln during August 1941, weather conditions apparently did not favor the development of the disease in grain sorghums in eastern Nebraska to the extent that it did in 1940. In 1940 the disease continued to develop up until harvest time with serious lodging in many of the grain sorghum varieties. In 1941 charcoal rot was present in the April 15 to 20 plantings of Early Kalo and Sooner with abundant sclerotia forming by the latter part of July. Fall rains began on September 2 and sclerotial development ceased in all except one or two of the most susceptible varieties, such as Colby milo. It even became increasingly difficult to find plants showing sclerotia in the planting of Early Kalo and Sooner where such plants had been abundant in late July. It was suspected that the moist conditions were largely responsible for this.

Precipitation was higher throughout eastern and southern Nebraska in 1941 than in 1940, especially during September and October. Temperatures, on the other hand, were lower except during August. Experimental data on the effect of temperature and moisture on charcoal rot of corn and sorghum are not available. Kendrick (1), Tompkins (2), and Tompkins and Gardner (3) found charcoal rot of beans, cowpeas, and sugar beets to be favored by high temperatures. In accordance with these results, field observations indicate that high temperatures also favor the development of the disease in sorghum. There are also indications that low moisture favors the disease.

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(EXTENSION PLANT PATHOLOGIST, LINCOLN, NEBRASKA).

SOME OBSERVATIONS ON TOBACCO DISEASES IN VIRGINIA IN 1941

S. B. Fenne

Black shank, Phytophthora parasitica var. nicotianae, known to be in Mecklenburg and Halifax Counties since 1939, appeared during 1941 on 2 additional farms in Halifax County and on 5 farms in Pittsylvania County. The infestation on 2 of the farms in Pittsylvania County was probably present as early as 1939, but was not seen until this year. The total tobacco allotment acreage of the 5 farms in Pittsylvania County was 48.9; of which 25.8 acres are infested with black shank. The losses due to black shank ranged from 5 percent on certain farms to 90 percent on other farms in both Halifax and Pittsylvania Counties.

Downy mildew, Peronospora tabacina, was of minor importance during 1941. The extremely dry weather, with extremely high temperatures, completely checked the disease before injury occurred. The average temperature for the week, May 19 to May 25, was 73°F. with precipitation negligible or less than 0.2 of an inch. A trace of downy mildew appeared quite generally in the eastern flue-cured tobacco counties about May 5; however, it disappeared completely within a few days, causing no apparent injury.

Granville wilt, Phytomonas solanacearum, has been increasing quite rapidly during the past few years, or ever since downy mildew caused growers to go into other areas of Virginia and adjoining States to purchase plants. In many instances growers who purchased plants from the outside brought in diseased seedlings, thereby introducing Granville wilt to their farms. The common practice followed by many growers of planting tobacco after tobacco has aggravated the situation and increased the amount of disease in many counties. There are now 44 farms, in 9 counties, in Virginia, known to be infested with Granville wilt.

Black root rot, Thielaviopsis basicola, is perhaps the most important disease of Burley tobacco in Virginia. Growers in Southwest Virginia have been urged to plant root-rot resistant varieties such as Kentucky 16 on farms infested with black root rot. Wherever this variety has been grown very good yields of tobacco have been obtained. Seed are readily available from several certified seed growers in Southwest Virginia. Black root rot is not generally so severe in the dark tobacco

belt; but its status in the bright tobacco area is still problematical. Several resistant flue-cured varieties, including "Yellow Special" have been developed and can be grown on these farms in the flue-cured belt where black root rot is a problem. No satisfactory black-root-rot resistant varieties of dark tobacco are available in Virginia. Black root rot, in 1941, caused a loss throughout the State of approximately 3 percent.

Sore shin, Rhizoctonia solani, and stem rot, Sclerotium rolfsii, are old offenders in Virginia, although sore shin appears to be more prevalent. One or both of these diseases appear to be present in varying amounts wherever tobacco is grown but our records during the past few seasons indicate they are becoming increasingly injurious. More information is desirable concerning both diseases; particularly since no satisfactory control measures are known. It would be hazardous to estimate the losses occasioned by these diseases during the 1941 season since so many of the growers are resigned to their presence and do not bother to report them.

Common mosaic, a virus disease, was more severe this year than usual. Even in the flue-cured area where this disease is usually of small consequence, mosaic was a serious problem on a number of farms. On several occasions, plantings of flue-cured tobacco amounting to as much as 10 acres per farm were 60 to 100 percent infected with common mosaic. Several of these appeared to have become inoculated at transplanting. It was clearly demonstrated at the time that the principal means of spread of common mosaic was through the use of home-cured chewing tobacco while handling plants. It was not possible to secure State-wide data on the losses occasioned by common mosaic, but we know that many individual growers suffered severe losses.

Ring-spot, another virus disease, was frequently found in the dark tobacco belt and to a less extent in the Burley and flue-cured areas. Our experience this season would indicate that ring-spot may approximate the distribution and severity of common mosaic unless a more satisfactory control program is forthcoming in the immediate future. It has been observed repeatedly that ring-spot is much more severe in those tobacco fields in the vicinity of lespedeza, clover, and alfalfa.

Brown spot, Alternaria longipes, which caused such severe damage in 1940, was of minor importance during the past season. This may have been due in part to the exceedingly dry weather during the latter part of the 1941 growing season, and probably to a less extent to the higher potash content of fertilizers being used by many of our tobacco growers.

Black fire, Phytomonas angulata, and wildfire, P. tabaci, were not observed within the State during the past year.

Root knot, Heterodera marioni, is a disease of comparatively minor importance in Virginia; however, it was observed in some light sandy fields in the eastern and southern tobacco areas. Much of our tobacco is grown on stiff red soil on which root knot does not usually become severe; but our attention was called to several farms in Pittsylvania County last season, having light textured soils, on which root knot appeared to be a limiting factor in flue-cured production.
(EXTENSION PLANT PATHOLOGIST).

SPREAD OF WHITE PINE BLISTER RUST IN SOUTHERN APPALACHIAN STATES IN 1941

Roy G. Pierce

During 1941 the spread of white pine blister rust, Cronartium ribicola, to new counties in the Southern Appalachian States extended from Raleigh County, West Virginia to McDowell County, North Carolina, a distance of about 134 miles. A continuous belt of 16 new counties has been added to those in which the blister rust has already been reported.

These newly infected counties include Mercer, Monroe, Raleigh, and Summers in West Virginia; Bland, Giles, Grayson, Pulaski, Smyth, and Wythe in Virginia; Ashe, Avery, McDowell, and Watauga in North Carolina; and Carter and Johnson in Tennessee. Although white pines were frequently examined in all of these counties the blister rust was found only on wild Ribes. In West Virginia all of the infected bushes were Ribes cynosbati, the prickly-berried gooseberry. In Virginia and North Carolina both cynosbati and rotundifolium, the round leaf gooseberry, were found infected in about even numbers. In addition, americanum, the wild black currant, was found at one place in North Carolina. In Tennessee both infections were found on cynosbati.

In West Virginia there were 8 new infection centers, in Virginia 8, in North Carolina 17, and in Tennessee 2, making a total of 35 new centers in 16 counties.

In West Virginia all infections were in white pine zones from 1,750 to 2,750 feet elevation. In Virginia the elevation of infected bushes ranged from 2,450 to 3,500 feet, in Tennessee from 3,500 to 3,800 feet, and in North Carolina from 3,000 to 5,000 feet. In the latter State a number of the infections were found above the white pine belt.

The infections were found from September 16 to November 6. All of the 17 infections in North Carolina showed telia while 3 in Watauga County also showed uredinia. In West Virginia both uredinia and telia were found. In Virginia 1 infection showed uredinia while all 8 showed telia. In Tennessee both infections showed telia.

For 25 of the 35 infections, data is available on the aspect or exposure of the site on which infected Ribes were located. Fifteen places had a northern, northeastern or northwestern exposure, 4 places had a southern exposure, 3 had an eastern exposure, 1 had a western exposure while 2 were on flat land. Infected bushes were for the most part medium to large in size, although at 2 locations in West Virginia they were small.

The explanation of the rather extensive spread this year is not entirely clear, but it is probably due to favorable climatic conditions in this region as no diseased pines were found in the newly infected counties.

According to monthly bulletins of the U.S. Weather Bureau on Climatological data for the 4 States concerned, weather conditions in April and June were conducive to the spread of the rust from pine to Ribes in the newly infected counties. There were several warm to hot days in late April with frequent rainfall and cloudy weather, and 3 continuous spells of rainy weather in June from the 1st to 5th; 8th to 15th,

and 23rd to 30th. In the northwestern counties of North Carolina rainy weather prevailed throughout July and August making conditions favorable for the spread of the rust from bush to bush in the uredinial stage. In southern Virginia and West Virginia rainfall for July was generally above normal.

Agent Ralph W. Welch of West Virginia found the first Ribes infection in a new county on September 16. He then trained his foreman and crew men in identification of the rust and they found 5 out of the 8 new West Virginia infections, including the only infection found in 2 of the 4 counties. The first infection found in North Carolina was by Agent H. A. Whitman on October 1, while the first Tennessee infection was found by Messrs. J. Curtis Ball of the Richmond office and Agent J. Wilburn Lane of Tennessee on October 10. Others who participated in the search for the rust were State leaders J. G. Luce, Jr., of Virginia, R. D. Tanksley of Tennessee, H. B. Teague of North Carolina, H. E. Yost of Maryland, and Agents Oscar V. Coulter, George C. Cramer, Walter Stegall, and the writer. All rust identifications involving new counties were confirmed either by the Division of Forest Pathology of the Bureau of Plant Industry, the regional leader of blister rust control for the Southern Appalachian States, or other specialists of long experience in blister rust control work.

This southward spread of the rust on Ribes is not especially important from a control standpoint, since practically all of the valuable white pine stands within the newly infected counties already have been protected by the initial eradication of Ribes. Thus, serious damage to pine growing within control areas has been prevented in advance of the invasion by the rust. The places where diseased Ribes were found were outside the boundaries of control areas, and while white pines were growing nearby in some cases, they were too few and scattered to be of sufficient value to justify control work. Such areas are scattered throughout the white pine region, and in these locations some damage and loss of white pine trees from blister rust is to be expected.
(PATHOLOGIST, BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE).

PRELIMINARY CHECK LIST OF ENTOMOGENOUS FUNGI OF NORTH AMERICA

A "Preliminary Check List of the Entomogenous Fungi of North America", by Miss Vera K. Charles, of this Division, has been issued as a supplement to The Insect Pest Survey Bulletin of the Bureau of Entomology and Plant Quarantine. This list has been prepared from the records available in the Division of Mycology and Disease Survey, and from the rather scattered literature on the subject. Fungi parasitic on insects are listed alphabetically with their insect hosts and with the distribution indicated by States and countries for North and Central America and the West Indies. Selected references to the literature on the subject are also included. Miss Gertrude Myers, of the Division of Insect Pest Survey Information, Bureau of Entomology and Plant Quarantine, has added an alphabetical list of the insect hosts involved. A supply of this publication is

now available and copies will be sent to collaborators and others interested on request to the Plant Disease Survey.

As indicated by the title the list is considered as a preliminary one, and it is hoped that entomologists, mycologists, and others concerned will report new fungi and new hosts as well as further distributional records. Such assistance will be appreciated, and will help to make possible in the future a more complete list.

CORRESPONDENCE

In transmitting an article by Dr. Elmer appearing in this issue, Dr. Melchers displays a constructive attitude so helpful that we take the liberty of reproducing his letter. As implied in the statement on the cover page, the Reporter always welcomes for prompt publication preliminary reports, comments, and suggestions. They are doubly welcome in the present emergency when they may contribute to the success of the Food for Victory campaign.

The letter follows:

> "I am transmitting herewith a timely short manuscript on the use of Spergon for sweetpotato seed and sprout treatments by C. H. Elmer of this department.
>
> "The results have been so encouraging and in view of the critical food situation, we believe that this should come to the attention of the sweetpotato growing sections of the United States without delay. Dr. Elmer had originally intended to carry out another year or two of work before publishing this, but we have felt that in this emergency it should not be delayed.
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> "May I suggest that this be printed in the Plant Disease Reporter just as soon as possible for the reason that it should be available in the next few weeks because of sweetpotato bedding in the southern States." --L. E. Melchers, Collaborator, January 16.